

U. S. Environmental Protection Agency  
Office of Transportation and Air Quality

August 28, 2001

Mr. Red Cavaney  
President and CEO  
American Petroleum Institute  
1220 L Street, NW  
Washington, D.C. 20005

Dear Mr. Cavaney:

This is in response to American Petroleum Institute's (API) March 16, 2001, petition for reconsideration of the final rule, "Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements Rule," (66 FR 5002 (January 18, 2001)).

After careful review of all of the issues raised in the petition, the Environmental Protection Agency (EPA) has decided against reconsidering the final rule. EPA did not commit procedural errors, we provided fair notice to the public throughout the rulemaking process, and the final rule is a logical outgrowth of the proposal. In addition, ATA has not presented any new evidence that would warrant reopening the rulemaking at this time. The enclosed document presents EPA's comprehensive response to the issues presented in the petition for reconsideration.

This rule, which will significantly reduce harmful exhaust emissions from heavy trucks and buses, is an important public health program. I am committed to ensuring that this program is implemented in a smooth and timely manner. I urge you to reconsider your opposition to certain parts of the program so that we may move forward as partners to make this a reality.

Sincerely yours,

Christine Todd Whitman

Enclosure

RESPONSE TO API'S REQUEST FOR RECONSIDERATION  
OF THE PHASE 2 FINAL RULE (HEAVY-DUTY ENGINES & TRUCKS)

I. Introduction

On December 21, 2000, EPA issued a final rule setting more stringent standards that will reduce emissions of oxides of nitrogen (NO<sub>x</sub>) and particulate matter (PM) from heavy-duty highway engines and trucks beginning in model year 2007 (the "phase 2 final rule"). The final rule also requires that highway diesel fuel contain lower sulfur levels beginning in mid-2006. The final rule was published in the Federal Register on January 18, 2001 (66 FR 5001).

On March 19, 2001, the American Petroleum Institute (API) submitted a petition to EPA requesting reconsideration of the phase 2 final rule based on the following claims:

- a) EPA Failed to Provide an Opportunity to Comment on the Emissions Inventory and Air Quality Assessments Performed to Support EPA's Decisions in the Final Rule;
- b) EPA Failed to Provide an Opportunity to Comment on Its NO<sub>x</sub> Adsorber Test Program;
- c) EPA Failed to Provide an Opportunity to Comment on Its Benefit-Cost Analysis;
- d) EPA Failed to Provide an Opportunity to Comment on the Information Developed in Response to API's Supply Study;
- e) EPA Did Not Adequately Consider the Role of Off-Highway Diesel in Its Analysis of Potential Supply Impacts of the Rule.
- f) EPA Failed to Provide an Opportunity to Comment on the Designated Test Method for Diesel Sulfur Selected in the Final Rule;
- g) Statements regarding ASTM D 5453 in the Preamble of the Final Rule Need Technical Correction;

For the reasons discussed below, EPA is denying API's Request for reconsideration. API has not demonstrated that EPA committed any procedural errors in its final rule with regard to API's claims. In addition, API has not provided any information or made any showing that would warrant reconsideration of this rule, or that would require reconsideration under section 307(d) of the Clean Air Act (Act.)

II. Background - the rulemaking history related to the issues raised in the petition.

## A. Emissions Inventory and Air Quality Assessments

The NPRM for the Phase 2 rule provided an extended discussion of the air quality problems and resulting need for further reductions in emissions from heavy duty vehicles and engines. 65 FR 35439-35456. EPA reviewed the adverse health and welfare effects of emissions from these engines and the air pollution situation that would likely exist without the rule. The health and welfare effects included those from short-term and long-term exposures to ozone and PM exceeding existing NAAQS and exceeding levels shown to be linked to adverse effects on human health. EPA also discussed the nature and extent of potential cancer risks associated with exposure to diesel exhaust. Finally, EPA discussed the effects of these emissions on visibility, air toxics, acid deposition, eutrophication, nitrification and POM deposition.

In providing EPA's explanation for its view that future ozone and PM levels could reasonably be anticipated to endanger public health without further reductions, EPA provided detailed urban airshed post-control modeling results from the recently-promulgated Tier 2 rule. The methodology for the modeling was explained in detail in the preamble and supporting documents. See e.g., 65 FR at 35440-35443; Draft Regulatory Impact Analysis, EPA Air Docket A-99-06,<sup>1</sup> Doc. No. III-B-01 (Draft RIA) at II-4 - II-8; Doc. No. II-A-30. The modeling predicted that without further reductions in emissions of ozone precursors, a significant number of areas with recent ozone exceedences would be at risk of failing to meet the 1-hour ozone standard in 2007 and beyond, even with the Tier 2 light duty vehicle standards and other controls currently in place (65 FR at 35440). A list of the areas at risk was provided. EPA also provided a discussion of other factors used to conclude that further emission reductions were needed to avoid significant risk that at least some areas would exceed attainment. The modeling also showed that many parts of the country would be at risk for prolonged and repeated exposure to ozone at levels of concern in 2007 and beyond if no further reductions were achieved.

EPA stated that for the final rule, we would provide information on expected ozone air quality levels reflecting the reductions from this rule. EPA said it would use the same modeling approach for the final Phase 2 rule as was used for the Tier 2 rule and the Phase 2 proposal, with updated inventory numbers, to determine the effect of the Phase 2 rule on modeled ozone concentrations. EPA stated that it would release materials related to the analysis on a continuous basis as they are developed (65 FR at 35442).

Regarding PM, EPA found that current concentrations and predictions of future concentrations indicated that without further reductions of PM, levels of PM would reasonably be anticipated to endanger human health and welfare. For PM<sub>10</sub>, EPA used the most recent monitoring data from 1996-1998. EPA used a source receptor matrix model to predict future levels of PM<sub>10</sub>. For fine PM, in the absence of quality-assured monitoring data, EPA used the REMSAD model to estimate PM<sub>2.5</sub> levels for 1996 and stated that for the final rule, it would

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<sup>1</sup> All future references to document numbers will be for EPA Air Docket A-99-06.

incorporate monitoring data from 1999 not yet available and would use the REMSAD model and updated inventories to estimate PM<sub>2.5</sub> levels for 1996 through 2030. EPA provided detailed discussions of the methodology used to predict levels of PM<sub>10</sub> and fine PM. See, e.g., 65 FR at 35447-35449; Draft RIA, at II-64 - II-69, II-77 - II-80.

EPA also provided estimates of the anticipated emission benefits from the Phase 2 rule, in terms of emission reductions, particularly reductions in NO<sub>x</sub> and PM emissions. EPA estimated that the standards would result in 90 percent reduction in NO<sub>x</sub> and PM emissions from new heavy duty engines and that as a result of this rule, emissions from such engines would account for only three percent of total national NO<sub>x</sub> inventory, down from the current level of fifteen percent, and a total of three percent of the national mobile source PM inventory, down from current levels of 14 percent (65 FR at 35456-35458).

Based on all these factors, we proposed that there was a need for further reductions of NO<sub>x</sub> and PM emissions from heavy duty engines and vehicles.

On July 28, 2000, API sent a letter to EPA requesting an additional 30 days to provide comments on the proposed rule. API listed several reasons for this request, but did not indicate any concerns regarding air quality assessments or inventories in that letter.

On August 14, 2000, API filed its comments on the NPRM. In its comments, API criticized at length the data and methodology used by EPA to analyze air quality. API took issue with the several aspects of EPA's modeling and inventory approach. Further, API claimed that the level of reduction of peak ozone concentrations from the Tier 2 rule, 2 ppb to 5 ppb, were insufficient to justify further mobile source controls. API also stated that EPA had not provided any analysis of the air quality benefits of the proposed rule, which denied API due process of law.

On October 11, 2000, EPA placed into the docket the final emissions inventories indicating EPA's estimate of emissions during and after implementation of the Phase 2 rule, including documentation and summaries of the inventories and their derivation (Doc. No. IV-A-05). On October 19, 2000, EPA placed into the docket a memorandum entitled "Air Quality Analyses to Accompany the Final Rule for Heavy Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements," which provided supplementary information regarding the methodology EPA would use for its analyses of air quality for the final rule. That memo noted that EPA would use the REMSAD modeling, rather than source-receptor matrix modeling for PM<sub>2.5</sub> in the final rule because of its superior technical sophistication (Doc. No. IV-B-01). EPA continued to supplement the record with further supporting and background materials on a continuing basis until the date of signature. For example, on November 28, 2000, EPA placed into the docket its summary of the modeled estimates of 1-hour ozone concentrations for the years modeled for the final rule (Doc. No. IV-B-07).

On December 5, 2000, API sent a letter to EPA requesting a 30 day reopening of the comment period. API stated that the volume of new air quality information warranted more time

for review. On December 18, 2000, EPA denied API's request for more time, stating that we had provided notice in the NPRM that EPA would supplement the docket on a continuous basis with further air quality information as it became available to EPA. This provided the public with an ongoing opportunity to review EPA's information.

On December 21, 2000, the final rule was signed. 66 FR 5001 (January 18, 2001). The air quality analysis used to determine ozone concentrations in the final rule was the same urban airshed modeling methodology that EPA used for the air quality analysis described in the NPRM, with updated inventories (66 FR at 5013). For PM<sub>10</sub>, EPA used updated monitoring data from 1997 through 1999 and updated inventories. EPA used projected emissions for its analysis of future PM<sub>10</sub> levels rather than REMSAD modeling because the model is more appropriately used to predict fine PM levels and because ambient PM<sub>10</sub> levels are heavily influenced by direct emissions of PM and can therefore be correlated with emissions inventories (66 FR at 5018-5019). For fine PM, EPA, as stated in the proposal, used current 1999 monitoring data and the REMSAD model to model baseline and post-control levels of fine PM. (66 FR at 5020-5021).

EPA's final air quality analysis continued to show the need for further reductions in PM and NO<sub>x</sub> to protect human health and welfare. The revisions to the air quality analyses from the proposal to the final rule did not substantially change the predicted results. There were only minor changes in predicted areas and populations at risk of exposure to unhealthy levels of ozone and PM.

- For 1-hour ozone, based on predictive ozone modeling and other state and local factors (e.g., magnitude of recent exceedences, historical exceedence trends), the Agency predicted there was a significant risk that an appreciable number of the 42 areas (with 123 million population) reviewed would violate the 1-hour ozone standard between 2007 and 2030 in the proposal (65 FR 35443). In the final rule, revised modeling predicted a significant risk involving 45 areas with 128 million people (1999 population) (66 FR 5015).
- For PM<sub>10</sub>, in the proposal we predicted 10 areas with 27 million people (1990 population) would be at risk of exceeding the PM<sub>10</sub> standard based on the source-receptor matrix (65 FR 35448). In the final rule, based on an analysis of nonattainment-area inventory trends, we again predicted that 10 areas with 28 million people (1999 population) would be at risk of exceeding the PM<sub>10</sub> standard (66 FR 5019-20).
- For prolonged and repeated exposure to moderate levels of ozone, in the proposal, we used only that portion of the population that was not exposed to 1-hour ozone exceedence levels. For the final rule, we used total population exposed. In the proposal, in 2007 the Agency predicted 33 million people would live in areas with moderate ozone levels for 2 or more days, excluding the areas that the Agency predicted at risk of exceeding the 1-hour ozone standard (Draft RIA, at II-58 - II-59) In the final, Agency modeling predicted that 116 million people would be at risk of living in areas with two or more days with 8-

hour ozone levels of 0.08 or higher in 2007, including those areas at risk of exceeding the 1-hour ozone standard (66 FR 5017). In 2007, the final modeled populations living in areas at risk of exceeding the 1-hour standard is 91 million (Final Regulatory Impact Analysis, Doc No. V-B-01 (RIA), Table II.A-2). Excluding this population from the 116 million people under a moderate ozone analysis indicates that 25 million remaining people would be at risk of living in such areas.

- For fine PM, we used modeled concentrations in the proposal and actual monitored values in the final rule. In the proposal, we found that 46% of population modeled lived in areas at or above 16 ug/m<sup>3</sup> of fine PM in 1996 (Draft RIA, at II-78 - II-79). For the final rule, 1999 inventories found 37% of the population monitored lived in areas with long term levels at or above 16 ug/m<sup>3</sup> of fine PM in 1999 (66 FR 5020). The findings in the proposal and final rules demonstrate a significant portion of the population live in areas with ambient long term fine PM concentrations exceeding 16 ug/m<sup>3</sup>.

EPA's Response to Comments document responded in detail to API's procedural and substantive comments. See, e.g., Responses to Issues 2.2(B), 2.2(C)(1), 2.2(F)(2), 2.2.(G), 2.4(D)(1), 2.4(E)(1), 2.4(E)(4), 12.2(H)(1), 12.2(I)(4).

API's Petition for Reconsideration claims that EPA failed to provide an opportunity to comment on the emissions inventory and air quality assessments discussed above. API states that EPA did not provide air quality modeling data regarding heavy duty engines in the proposed rule. API states that it asked EPA when it would provide this data several times during the rule. API notes that the docket index includes receipt of two contractor reports on October 17, 2000 and ten EPA memoranda on December 12, 2000, and that the technical support document was not available until the final rule. API claims EPA's docketing of the material was late and piecemeal and did not provide the public opportunity for meaningful comment. API claims that this data is "of central relevance to the outcome of the rule."

#### B. EPA's NO<sub>x</sub> Adsorber Test Program

In the proposal, EPA discussed in considerable detail the feasibility of the proposed heavy-duty engine standards for diesel engines. See 65 FR at 35466-35472; Draft RIA at III-2 - III-23. EPA concluded that the proposed standards for NO<sub>x</sub> and PM were technically feasible and appropriate. EPA specifically discussed several types of technology, particularly NO<sub>x</sub> adsorbers and PM traps, that could provide the level of control needed to meet the standards. EPA referred to several studies, test programs and other information that supported EPA's discussion, indicating that NO<sub>x</sub> adsorbers could provide NO<sub>x</sub> reductions of greater than 90%. EPA noted that NO<sub>x</sub> adsorbers were already achieving such reductions in stationary applications and that NO<sub>x</sub> adsorbers were already in production on gasoline direct injection vehicles in Japan. Several studies examining the use of NO<sub>x</sub> adsorbers on diesel engines had been reported and demonstrated very low NO<sub>x</sub> emissions (65 FR at 35468-35470). EPA concluded that NO<sub>x</sub> aftertreatment technology, in combination with low sulfur diesel fuel, would be capable of meeting the stringent NO<sub>x</sub> standards proposed. EPA also noted that selective catalytic reduction

was another possible approach to reducing NO<sub>x</sub> emissions, but that significant challenges remain for the widespread use of such systems, in particular, the need for refueling with urea create infrastructure and enforcement concerns.

On July 28, 2000, API requested a 30-day extension of the comment period, which was scheduled to end on August 14, 2000. One of the reasons for this request was API's statement that EPA was currently involved in a test program on aftertreatment technologies and that the public should have adequate time to comment on information related to EPA's test program. On August 8, EPA responded and denied the extension (IV-C-03). EPA noted that the comment period had been open since mid-May and had included five public meetings. EPA also noted that its proposal was based on robust and extensive analyses of the technological feasibility of the proposed program and was based on the best information available. EPA stated that nonetheless, emerging information would be reviewed to ensure that information is consistent with the conclusions in the proposal. EPA noted that it would make every effort to assess information received following the end of the formal notice and comment period and would stay in contact with API and others to become aware of additional relevant information.

In API's comments, API objected that EPA had not provided sufficient analysis of the feasibility of the proposed standards. API stated that the technology for meeting the standards was unproven and not fully developed. API raised specific concerns with NO<sub>x</sub> adsorbers, including durability and performance at low and high temperatures, that it claims were not adequately addressed in EPA's proposal or in the documents supporting the proposal or the studies, e.g. the DECSE study cited in the proposal.

On October 3, 2000, EPA responded to correspondence from the Hon. Henry Waxman, noting several pieces of evidence indicating that NO<sub>x</sub> adsorbers could be used to dramatically reduce NO<sub>x</sub> levels. One of the pieces of evidence noted was the results of an ongoing testing program at EPA's Ann Arbor laboratory indicating that NO<sub>x</sub> adsorbers could reduce NO<sub>x</sub> emissions by as high as 99%.

On October 23, 2000, EPA provided API with a Screening Summary of the ongoing test program (IV-C-08). The summary described the parameters of the testing and preliminary results showing NO<sub>x</sub> adsorbers were capable of reductions above 90 percent.

On December 5, 2000, API wrote to EPA requesting a 30 day reopening of the comment period. API stated that the test results in EPA's October 23 letter were too vague for EPA to draw any conclusions. API asked several questions concerning the test program. API stated that the new information is obviously important to the technological feasibility argument and that the public should be allowed time to comment on the new information.

On December 12, 2000, EPA provided API with EPA's Initial Test Report, dated December 11, 2000, providing the test information for EPA's NO<sub>x</sub> adsorber test program. It contained detailed information regarding the test program, describing the emission control system being tested (catalyzed diesel particulate filters with multi-leg NO<sub>x</sub> adsorbers), the engine

and exhaust system configuration, the test fuel and measurement equipment, the optimization process, and the results of the testing, which indicated that the configuration could achieve 90% NO<sub>x</sub> reductions under the emissions limits applicable to that engine family and FTP test cycles. The report addressed most of the issues API brought up in the December 5, 2000 letter. The final RIA addressed other issues from the December 5 letter.

On December 18, 2000, EPA denied API's request for more time, stating that we had provided API with a test report on December 12, 2000 and had also provided information regarding the test program in October and had attempted to provide answers to follow-up questions asked by staff in subsequent phone calls. The letter also stated that the information was sufficient to understand the test program, the process by which the data was generated, and the test results.

On December 20, 2000, API provided additional questions and comments to EPA on the test program. API requested that EPA consider these comments as it makes its final determinations.

On December 21, 2000, the final rule was signed. EPA's Response to Comment document responded in detail to API's procedural and substantive comments. In particular, EPA responded to the issues raised by API in its letter of December 20. See, e.g., Responses to Issues, 3.2.1(C), 3.2.1(J).

API's Petition for Reconsideration claims that EPA failed to provide an opportunity to comment on the NO<sub>x</sub> adsorber test plan discussed above. API claims that EPA's test program results were not released until December 12, 2000 and that EPA provided nothing in response to its requests for information regarding the test program between July and December of 2000. API claims that it sent written questions on the program to EPA on December 5, 2000 and that after EPA provided API with the test program results on December 12, 2000, API sent additional questions to EPA on December 20, 2000. API claims that this information was docketed too late to allow for meaningful comment. API claims that the NO<sub>x</sub> adsorber test program concerns an issue (technological feasibility of engine control technology) that is "centrally relevant to the outcome of this rule."

### C. Benefit-Cost Analysis

In the NPRM, EPA provided detailed discussion of the reductions in tons of NO<sub>x</sub> and NMHC, and PM that were expected from implementation of the proposed standards. The NPRM also provided the expected cost of the proposal and the cost-effectiveness (i.e. cost per ton of emissions reduced) of the proposal. EPA compared this cost-effectiveness to that of other means of reducing emissions and found that the program was cost-effective in comparison with other past and potential future strategies.

EPA noted that in addition to cost-effectiveness, another method of analyzing the program was through benefit-cost analysis. EPA stated that there currently were critical

limitations on the ability of cost-benefit analysis to estimate the effects of environmental policy changes in exact and unambiguous terms. Therefore, EPA would use benefit-cost analysis as a tool to inform, rather than dictate, our decisions. EPA stated that the quantification of benefits would not be available until the final rule but that, based on the similarity of the proposal with the Tier 2 rule in terms of costs per ton of emissions reduced and the type of health and welfare benefits expected, the benefits would substantially outweigh the costs. EPA laid out in detail the methodology it would use to produce the benefit-cost analysis.

API's comments on the benefit-cost analysis state that the Agency's method of benefit-cost analysis is "basically a waste of time and money," because of the temptations for manipulation of data (IV-D-343 at 81). Also, API states that it is not a very useful tool for comparing alternatives. API instead supported the use of cost effectiveness analysis. Despite this, API states that it is surprised EPA would write multiple pages on the benefit-cost analysis process but not issue the benefit-cost analysis as part of the proposed rule. API claimed that EPA's failure to complete a benefit-cost analysis until the final rule is an abrogation of the rulemaking process because it withholds essential justification documents. API requested that EPA issue the benefit-cost analysis as soon as possible and extend the comment period accordingly.

EPA released the benefit-cost analysis with the final rule. EPA noted that while we used relative cost-effectiveness as the principal economic policy criterion for the rule, we also performed a benefit-cost analysis to provide further insight. The analysis used virtually the same methodology as we provided in the NPRM. As expected, the results indicated that the benefits of the rule will be significantly greater (\$70.4 billion in 2030) than the costs of the rule (\$4.3 billion). EPA could not make the benefit-cost analysis available in advance of the Final Rule because of the time required to complete the analysis. EPA released the component parts of the analysis (final emissions inventory projections, air quality modeling) as they were completed. EPA's Response to Comments document responded to API's comments on this issue. See, e.g., Response to Issue 5.10(E).

API's Petition for Reconsideration claims that EPA failed to provide an opportunity to comment on the benefit-cost analysis. API claims that it asked the Agency in its comments when it would release a benefit-cost analysis, but did not see the analysis until the Final Rule. API claims that the analysis is "of central relevance to the rule." API notes that E.O. 12866 requires agency's to provide a benefit-cost analysis.

#### D. Issues and Information Related to the Supply of Highway Diesel Fuel.

EPA's proposal discussed issues concerning the supply of highway diesel fuel in detail and invited comment on these issues. This included, among other things, the role played by nonroad diesel fuel in the supply and cost of highway diesel fuel. EPA did not propose any standards for nonroad diesel fuel in this rulemaking. Instead, EPA announced that it had "plans to initiate action in the future to formulate thoughtful proposals covering both nonroad diesel fuel and engines." 65 FR at 3559. EPA's decision was based, in part, on information received in

response to the Advanced Notice of Proposed Rulemaking, where EPA requested comment on how diesel fuel sulfur reductions impact the quality, cost, and availability of other products. See ANPRM, Issue 21: Impacts on Other Refinery Products. However, EPA was aware that refiners, fuel distributors, states, environmental organizations, and others wanted EPA to provide as much information as possible about the future specifications for nonroad fuel as early as possible. 65 FR at 35438.

Even though EPA did not propose to regulate nonroad fuel in this rulemaking, EPA was aware of the role it played in the supply, cost, and compliance with the highway diesel fuel program. In the NPRM, EPA requested comment on this and many other supply issues. For example, EPA invited comment on “the potential for diesel fuel shortages at the beginning of the program that some believe might result from individual refinery decisions to shift all or a portion of their production to other distillate products or export.” 65 FR at 35486. EPA stated in the NPRM that API believed that many refiners may reduce their production of highway diesel fuel, by switching the feedstock (i.e. LCO) which are most difficult to desulfurize to other markets, thus avoiding the higher investments associated with high pressure hydrotreating. 65 FR at 35494. EPA requested comment on this issue. 65 FR at 35495. EPA requested comments on the possibility that the proposed 15 ppm sulfur cap would cause some refiners to abandon the U.S. highway diesel fuel market or to reduce highway diesel fuel production. EPA asked what impact this would have on diesel fuel supply. 65 FR at 35495. EPA also requested comment on “the economic viability of alternative markets for current highway diesel fuel or its more difficult to desulfurize components.” 65 FR at 35495.

EPA also discussed several other issues related to the supply of on-highway diesel fuel. In discussing whether a 15 ppm cap could be maintained in the distribution system, EPA acknowledged the possibility of an increase of noncomplying fuel in the system. This off-specifications fuel would either have to be downgraded to nonroad diesel fuel, or re-refined. EPA stated that while this could cause temporary, local market shortages of the fuel, its occurrence should be low enough not to impact the costs of the program. EPA requested comment on this issue. 65 FR at 35483.

EPA also requested comment on whether the proposed 15 ppm cap standard should also have an average standard. Refiners argued for a higher maximum cap (if any) arguing that the cost of reducing the sulfur level below a cap of 50 ppm (and an average of 30 ppm) becomes prohibitively high. If such an approach could enable the engine emissions control technology, EPA asked “the extent to which it would help address the concerns refiners raised with very low sulfur levels with respect to the potential for fuel shortages and price increases.” 65 FR at 35481-2. EPA also discussed an average, banking, and trading program in the context of an average standard. EPA sought comment on whether additional flexibility of offering “average credits” at a predetermined price would benefit refineries. 65 FR at 35482.

EPA also discussed at length why EPA believed that the fuel standard is technologically feasible. 65 FR at 35483. EPA outlined technologies refiners could use and whether these technologies were commercially demonstrated. 65 FR at 35484. EPA requested comment on

whether the 2006 start date for the diesel fuel standard was appropriate, considering refiners planning process for meeting the requirements. 65 FR at 35482-3. EPA noted that if refiners had to schedule additional down time in order to complete the revamp to desulfurization technologies, the production of diesel fuel could be affected. EPA expected that any resulting shortfall on production would be made up by other refiners or the previous build up of inventory. EPA requested comment on the “ability of the industry to continue to supply highway diesel fuel,” while it is modifying equipment in order to comply with the proposed 15 ppm cap. 65 FR at 35485.

In the NPRM, EPA also discussed concerns regarding the refining industry’s ability to raise necessary capital to make the modifications necessary to meet a 15 ppm cap. Prior to the NPRM, EPA promulgated regulations requiring refiners to reduce the sulfur level in gasoline, another capital expenditure. Refiners expressed concern that some refiners might refrain from investing to continue production of highway diesel fuel, which could cause a shortage when the program is implemented. EPA stated that its proposed programs were designed to provide flexibility and minimize costs to refiners. “[W]e believe that despite the capital cost of desulfurizing their highway diesel fuel, other options for marketing the distillate streams from their refineries will be limited.” 65 FR at 35485-6.

The NPRM also discussed possible phase-in options for refiners to meet the proposed 15 ppm sulfur level. Refiners indicated that there would be uncertainty in whether or not to invest. EPA noted that refiners might make the choice to exit the highway diesel market or to reduce production volume of highway fuel. 65 FR at 35506. EPA believed that a phase-in could help spread out the design, construction, and capital expenditure of refinery modifications. EPA requested public comment on the necessity and ability of a phase-in to address concerns regarding the risk of supply shortages. 65 FR at 35485-6, 35495.

In response to the NPRM request for comment on various supply related issues, API submitted comments with its views on the potential supply implications of the rule on the diesel fuel pool. API contracted with the Charles River Associates (CRA) and Baker and O’Brien to study the potential supply implications of the NPRM. CRA concluded that U.S. refiners would likely reduce their highway diesel fuel production by an average of 12 percent, creating significant shortages and price spikes. 66 FR at 5095

EPA met with API for clarification of the results of the CRA study on September 27, 2000. API supplied responses to EPA and DOE’s questions, as presented in the meeting. Notes summarizing the meeting were placed in the docket December 21, 2000. EPA Docket A-99-06, IV-G-191.

In correspondence with a member of Congress, EPA raised various concerns about the CRA study. EPA stated that the report “ignores numerous key facts and makes erroneous assumptions to conclude that supply reductions could occur in 2006.” EPA noted its concerns on the failure of CRA to address the real status of highway diesel supply and the excess volume currently used for nonroad, and on the lack of substantiation for the claim that 20 refineries

would stop making highway diesel fuel. The study also did not address the proposed regulatory flexibilities and safety valves that could allow refiners additional time to comply and the opportunity to spread out capital investment. (Letter to Honorable Henry A. Waxman, October 3, 2000).

EPA also commissioned a study by Muse, Stancil and Co. to supplement EPA's analysis. See "Alternative Markets for Highway Diesel Fuel Components," September 2000. EPA docket A-99-06, IV-A-35. The three major study tasks of the study were to "1) develop a list of existing and potential distillate products in the U.S. and overseas, 2) determine the relative value and volume of the distillate diverted from low-sulfur diesel production, and 3) consider and comment upon two distillate production scenarios that a refiner may elect to employ." Study at 2. The study supported EPA's view that "any substantial quantities of highway diesel fuel diverted to other markets will depress prices in those markets substantially." 66 FR at 5095.

In December 2000, the National Economic Research Associates (NERA) released its analysis of the CRA study for the Alliance of Automobile Manufacturers ("Potential Impacts of Environmental Regulations on Diesel Fuel Prices", December 2000). NERA claims that shortages and significant price increases are unlikely in the long run because the higher prices will result in an increased supply. API submitted a response to the NERA analysis, prepared by CRA and Baker and O'Brien. API Rebuttal of NERA Analysis of CRA/BOB Report, December 20, 2000. The NERA critique of the CRA study raised many of the same issues as Muse, Stancil.

In the final rule, EPA detailed its criticisms of the CRA study and its support for the Muse, Stancil and Co. report findings. 66 FR at 5095-6, Response to Comments 8.1.1(A)(B), & (C). EPA rejected the CRA study's conclusion that there will be significant supply shortfalls because of several problems with the study detailed in the final rule, "plus the lack of detail available concerning the specifics of the study. 66 FR at 5095." EPA developed its own refining cost model to assess the likelihood that refiners would leave the highway diesel fuel market or reduce their production of highway diesel fuel, or join the highway diesel fuel market. *Id.* and see RIA at V-C (V-60-V-147). EPA stated that if any potential for highway diesel fuel shortages existed by requiring all fuel to meet 15 ppm sulfur in 2006, as CRA's analysis suggests, "we believe that allowing some continued supply of 500 ppm, as we are doing under the temporary compliance option and hardship provisions contained in today's action, address this concern." 66 FR at 5096-6 In the final rule, EPA stated its view that supplies of highway diesel fuel would be sufficient even if all highway diesel fuel were required to comply with the 15 ppm standard in 2006. The temporary compliance option along with the hardship provisions promulgated in the final rule would further help to ensure adequate supplies of highway diesel fuel beginning in 2006. 66 FR at 5069-70. "Most of the refiners that currently produce highway diesel fuel will produce about the same volume of low sulfur diesel fuel once the program takes effect." 66 FR at 5070. Issues of supply of highway diesel fuel were discussed at length in the preamble, RIA and Response to Comments for the final rule.

In its Petition for Reconsideration, API states that EPA's proposal did not address the potential impact the rule could have on the supply of diesel fuel, and describes the various

comments, submissions, and responses by API and others on this issue. API request an opportunity for public comment on the data that has been submitted regarding the potential implications of the final rule on the supply of diesel fuel. Petition at 10. In its Petition for Reconsideration of the final rule, API also reiterates its view that EPA should have controlled nonroad diesel fuel in this rulemaking along with the controls for on-highway diesel fuel. It also states that on-highway diesel supply issues are of central relevance to the outcome of this rule and requests that EPA provide an opportunity for public comment on the role of off-highway diesel in supply, cost, and compliance with the final highway diesel fuel program. Petition at 10, 11.

#### E. Designated Test Method for Diesel Sulfur and Statements Regarding ASTM D 5453-00 in the Final Rule.

In the NPRM, EPA proposed to designate a modified version of ASTM D 2622-98 (Standard Test Method for Sulfur in Petroleum Products by X-Ray Spectrometry) as the designated test method because it was in wide use by refiners and laboratories both for gasoline and diesel testing. 66 FR at 35531. EPA's review of the test method with the proposed modification showed an acceptable precision at sulfur levels below 15 ppm Id. EPA also proposed to allow the use of alternative test methods for quality assurance testing provided that the proper correlation is established between the alternative method and the benchmark. Id. EPA requested public comment on the proposed testing method, based on a review of currently available methods. Id.

In comments on the NPRM, submitted August 14, 2000, API stated that it had a number of concerns about the test method EPA proposed for determining compliance with the proposed sulfur standard. API recommended that EPA adopt D 5453-00 (Standard Test Method for Determination of Total Sulfur in Light Hydrocarbons, Motor Fuels and Oils by Ultraviolet Fluorescence) as the designated testing method and that D 2622-98, D 4045 and D 3120 be allowed as alternatives within their scope of applicability. API argued that the cost and performance advantages of D 5453 should be considered. API also provided detailed comments in an effort to "convince the Agency that there is a better approach for a designated method to measure sulfur content of diesel fuel at low levels, namely D 5453-00 – at least until something can be convincingly demonstrated to be better using real world data." API Comments at 59-63.

API and NPRA met with EPA on November 15, 2000 to discuss questions EPA had regarding test methods for measuring sulfur in diesel fuel including various candidate test methods. API and NPRA submitted answers to EPA questions in writing. See letter to Ann-Marie Pastorkovich from Robert Shaefer, December 1, 2000, EPA Docket A-99-06, IV-G-95. EPA's questions included ones on the appropriate designated test method and alternative test methods. API commented that it disagreed with the use of D 2622-98 (as explained in the NPRM) as the designated method because it is untested and its precision unknown. See letter, question 3.

API also commented on “a list of candidate test methods which you requested we comment on.” See letter, question 3. One of these methods was D 6428-99 (Test Method for Total Sulfur in Liquid Aromatic Hydrocarbons and Their Derivatives by Oxidative Combustion and Electrochemical Detection). API opposed the use of D 6428-99, stating that the “[i]ndustry has no experience using this instrument for measuring sulfur in gasoline and diesel fuels.” Id.

In the final rule, EPA decided that for motor vehicle diesel fuel subject to the 15 ppm standard, D 6428-99 would be the designated test method. 66 FR at 5121-2, see 40 CFR § 80.580. EPA acknowledged that there would be more than one test method that may be used to determine the sulfur content of diesel fuel at low levels and believed that it was appropriate to allow alternative analytical test methods as long as they are correlated to the designated test method. The ASTM methods that are allowed as alternative test methods under this rule are ASTM D 3120-96, “Standard Test Method for Trace Quantities of Sulfur in Light Liquid Petroleum Hydrocarbons by Oxidative Microcoulometry.” and D 5453-00, “Standard Test Method for Determination of Total Sulfur in Light Hydrocarbons, Motor Fuels and Oils by Ultraviolet Fluorescence.” The use of the modified form of D 2622-98, which was proposed to be the designated test method, may be used as an alternative test method. 66 FR at 5121-22.

EPA stated in the final rule that it selected D 6428-99 because its stated analysis range was most appropriate. In EPA testing, D 6428-99 has equivalent or better statistical response than other test methods. EPA stated that it was concerned that D 5453-00, recommended by API, “may not accurately measure all sulfur-containing compounds such as some found in diesel fuel additives.” EPA stated that D 6428-99 does not appear to have that drawback. Response to Comments 8.2(D), (E), (F), (G), (H), and (I).

In the API Petition for Reconsideration, API states that the test method is “of central relevance to the outcome of the rule,” and requests that EPA provide an opportunity for public comment on the designated and alternative test methods. Petition at 2, 3.

API also requests that EPA provide a more complete rationale for its selection of D 6428-99 as the designated method. Petition at 3.

In the Petition for Reconsideration, API objects to EPA’s statement that it did not choose D 5453-00 as the designated method because “[EPA does] do not believe that it will measure sulfonates.” Petition at 3. API requests that EPA correct this and other erroneous statements or provide the data that form the basis for these statements. Petition at 4.

### III. Standard for Reconsideration

Section 307(d)(7)(B) governs the standard for when EPA is required to convene a proceeding for reconsideration under the Clean Air Act. Under that section, if a “person raising an objection can demonstrate to the Administrator that it was impracticable to raise such objection within [the period for public comment] or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) and if such

objection is of central relevance to the outcome of the rule, the Administrator shall convene a proceeding for reconsideration of the rule and provide the same procedural rights as would have been afforded had the information been available at the time the rule was proposed.”

API’s Petition for Reconsideration primarily raises procedural objections, focusing on EPA’s docketing of certain documents in the record for the Phase 2 diesel rule after the close of the formal public comment period . For API to meet the requirements of section 307(d)(7)(B), API must first show that EPA committed procedural error.<sup>2</sup> Further, under the Act, an action may be reversed by a reviewing court for procedural error only if:

- i) the failure to observe the procedure(s) is arbitrary or capricious; and
- ii) a specific objection to the procedure employed was raised during the public comment period, or afterwards if the grounds for objection arose only after the comment period and the objection is of central relevance to the outcome of the rule; and
- iii) if the errors were so serious and related to matters of such central relevance to the rule that there is a substantial likelihood that the rule would have been significantly changed if such errors had not been made.

Section 307(d)(9)(D) (paraphrasing cited provisions). *See Air Pollution Control District of Jefferson County, Ky v. EPA*, 739 F. 2d 1071 (6<sup>th</sup> Cir. 1984). The reference to “central relevance” in 307(d)(9)(D)(iii) quoted above is very similar to section 307(d)(7)(B)’s language that a petition for reconsideration must be granted only if the objection is of “central relevance to the outcome of the rule.” EPA believes it should apply the same approach under section 307(d)(7)(B).

When reviewing claims of procedural error under both the Clean Air Act and the Administrative Procedure Act, the courts have emphasized that it is appropriate for agencies to learn from comments and other information received or developed after the proposal and to modify or update its position or the evidence it relies on without further notice and comment as long as the final rule is a logical outgrowth of the proposal. *See Appalachian Power v. EPA*, 135 F. 3d 791, 815 (D.C. Cir 1998); *Natural Resources Defense Council v. Thomas*, 838 F. 2d 1224, 1242-43 (D.C. Cir. 1988); *City of Stoughton, WI v. EPA*, 858 F2d 747, 753 (D.C. Cir 1988); *International Fabricare Institute v. EPA*, 972 F. 2d 384, 399 (D.C. Cir, 1992); *Rybachek v. EPA*, 904 F. 2d 1276, 1286-88 (9<sup>th</sup> Cir., 1990). *See also Connecticut Light and Power Co. v. NRC*, 590 F. 2d 1011, 1031 (D.C. Cir 1978) (“The agency need not renounce changes that follow logically

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<sup>2</sup>EPA may docket and rely on material submitted after the end of the comment period in promulgating a final rule. *See* CAA section 307(d)(6)(C) (“The promulgated rule may not be based ... on any information or data which has not been placed in the docket *as of the date of such promulgation*. [emphasis added]”); CAA section 307(d)(4)(B)(ii) (“All documents which become available after the proposed rule is published and which the Administrator determines are of central relevance to the rulemaking shall be placed in the docket as soon as possible after their availability”).

from or that reasonably develop the rules it proposed originally. Otherwise the comment period would be a perpetual exercise rather than a genuine interchange resulting in improved rules.”); *Community Nutrition Inst. v. Block*, 749 F. 2d 50, 58 (D.C. Cir. 1984) (“Rulemaking proceedings would never end if an agency’s response to comments must always be made subject to additional comments.”). To determine logical outgrowth, courts have examined the specific circumstances, including whether and how the final rule changed from proposal to final, how the new information relates to the proposal, the other information in the record, the length of time to comment on the new information, and so on.

Further, a party raising a procedural objection must provide specific objections and a description of how the party would have responded to any late-submitted documents or other information. *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F. 2d 506 (D.C. Cir 1983) (“It is also incumbent upon a petitioner objecting to the agency’s late submission of documents to indicate with ‘reasonable specificity’ what portions of the documents it objects to and how it might have responded if given the opportunity.”); *Air Transport Ass’n v. FAA*, 169 F. 3d 1, 8 (“a petitioner objecting to the late submission of documents must indicate with ‘reasonable specificity’ what portions of the documents it objects to and how it might have responded if given the opportunity.” [citations and internal quotations omitted]). Based on this, the petitioner must show that had the alleged procedural error not occurred, it “would have led to a significant change in the final rule.” *Appalachian Power*, 135 F. 3d at 815. See *Union Oil Co. v. EPA*, 821 F. 2d 678, 683 (D.C.Cir 1987) (court found harmless error in EPA’s failure to place in docket memorandum regarding the costs and benefits of the challenged rule).

#### IV. Analysis of Petition.

##### A. Emissions Inventory and Air Quality Assessments.

API claims that EPA did not provide its final air quality modeling analysis in the proposed rule and that the data relating to air quality modeling used in the final rule was placed into the docket late and piecemeal. API claims that the grounds for this objection came after the end of the period for public comment. API also claims that the data is “of central relevance to the outcome of the rule.” API provides no substantive or technical objections to the air quality material that it claims was provided late, and makes no demonstration of how any such substantive or technical objection would be expected to lead to a change in the rule.

API has not provided sufficient justification to support its request for reconsideration of the rule on this claim. EPA therefore rejects the petition on this issue. A petition for reconsideration must be granted under section 307(d)(7)(B) only where the person making an objection demonstrates that: 1) it was impracticable to raise the objection within the period of notice and comment or the grounds for objection arose after the period for public comment; and 2) the objection is of central relevance to the outcome of the rule. EPA believes that API has not met either of these criteria.

Regarding the first criterion, API's procedural objection could have been raised, and was raised, during the comment period. API's procedural objections are merely reiterations of objections they raised during the rulemaking. API provides no analysis or commentary on the material provided after the close of the comment period, new or otherwise, nor does it provide any other materials that could not have been provided during the rulemaking. EPA provided a full description of the air quality modeling done for the proposal. EPA also discussed the expected reduction in emissions that would result from the rule and the expected air quality benefits from the rule. API had full knowledge that the air quality analyses would be revised and that the post-Phase 2 analysis would not be available during the time of the comment period. In fact, API's comments included an objection to the absence of this data. API Comments, IV-D-343, at 4, 92. API's letter of December 5, 2000 also dealt with this issue. EPA responded to this objection at Issues 2.4.(D)(1) and 12.2(H)(1), noting that the proposal documented in detail the air quality need for the rule and the tons of emissions expected to be reduced under the rule. EPA noted that it did put further materials, including the latest inventories, into the docket beginning in October, providing enough time for comment on the material. Therefore, reconsideration is not appropriate based on such objection.

Furthermore, even if API's procedural objection could not have been made within the period of notice and comment or if the grounds for the objection had arisen after period for public comment, API's objection still does not merit reconsideration of the rule. API has failed to provide any evidence or other indication of how its procedural objection is of central relevance to the outcome of the rule. There are several reasons for this conclusion, any one of which would indicate that reconsideration is not appropriate.

First, an objection based on procedural grounds would not be of central relevance to the outcome of the rule, and hence would not require reconsideration, if the Agency did not commit a procedural error. That is the case here. API had reasonable notice and an opportunity to raise any substantive objections regarding EPA's air quality analysis during the rulemaking, and in the circumstances presented here, EPA's final rule was a logical outgrowth of the proposal.

EPA provided a full air quality analysis in its proposal. The analysis showed that without further reductions in ozone precursors, several areas were in danger of exceeding the ozone NAAQS. It also showed that without further reductions in PM, several areas were in danger of exceeding the PM NAAQS. EPA also showed that without such further reductions, many areas of the United States would be in danger of having prolonged exposure to ozone and exposure to fine PM at levels that would be harmful to human health. Petitioners were fully aware of the methodology used in the analysis and provided several pages of comments regarding the methodology and the inventories EPA used in the proposal. See API Comments, IV-D-343, at 3-16. EPA also indicated in the proposal that the final air quality analysis for ozone would use the same methodology as the air quality analysis in the proposal and that revised analysis would be based on later inventories that would be put into the docket as they became available later in the rulemaking. 65 FR at 35442. EPA also stated that the final rule would include modeling based on inventories for two cases: the baseline inventory that would not presume the emission

reductions from the standards and a second inventory that would include these reductions. 65 FR at 35500.

The proposal also provided EPA's analysis of the benefits of the rule in terms of emission reductions, particularly NO<sub>x</sub> and PM reductions. 65 FR at 35456-35460. EPA concluded that:

[t]hese reductions would help reduce ozone levels nationwide and reduce the frequency and magnitude of predicted exceedences of the ozone standard. These reductions would also help reduce PM levels, both by reducing direct PM emissions and by reducing emissions that give rise to secondary PM. The NO<sub>x</sub> and SO<sub>x</sub> reductions would help reduce acidification problems, and the NO<sub>x</sub> reductions would help reduce eutrophication problems. The PM and NO<sub>x</sub> standard proposed today would help improve visibility. All of these reductions could be expected to have a beneficial impact on human health and welfare by reducing exposure to ozone, PM, and other air toxics and thus reducing the cancer and noncancer effects associated with exposure to these substances.

65 FR at 35460.

EPA provided updated inventories that it would use for the final rule, including inventories showing emission reductions expected from the rule, on October 11, 2000. Based on this information, API could have provided its own evidence on the expected reductions in ozone from the Phase 2 rule, or could have provided criticisms of any portion of EPA's analysis, or provided alternative runs based on its own methodology. Indeed, even prior to the docketing of the revised inventories, API could have provided alternative modeling based on its view of the appropriate inventories and the reductions anticipated. API did not do so. EPA also updated the docket on October 19 with further information regarding the modeling methodology that would be used in the final rule, including changes in its modeling methodology for PM<sub>10</sub>. EPA provided further supplementary data as it became available.

The final rule contained air quality analyses similar to those in the proposal. EPA used the same modeling analyses, and the same meteorological conditions, in the final rule to predict ozone levels as were used in the proposal. 66 FR 5014 fn. 21. For PM<sub>10</sub>, EPA evaluated projected emissions rather than air quality modeling because no modeling approach was sufficiently demonstrated to predict short-term PM<sub>10</sub> concentrations.<sup>3</sup> EPA used the REMSAD model, as proposed, to model baseline and post-control levels of fine PM; however, we predicted future fine PM levels only for areas with current monitored data, as this is the most appropriate basis for estimating future fine PM levels. 66 FR 5020-21. EPA used the updated inventory estimates discussed above to produce the final analyses. The final rule contained modeling based

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<sup>3</sup> EPA noted that in contrast to ozone concentrations, ambient PM<sub>10</sub> concentrations are more heavily influenced by direct emissions of particulate matter and therefore can be correlated more meaningfully with emissions inventories. 66 FR 5019 fn. 27.

on inventories developed with and without the reductions expected from the rulemaking. The new analyses confirmed the air quality need analyses in the NPRM. The final rule also contained the final expected emission reductions from the rule, and again it confirmed that the rule would provide substantial reductions in emissions of several pollutants, particularly NO<sub>x</sub> and PM. 66 FR 5029-5032. The air quality results discussed in the proposal and in the final rule were consistent and similar, with no major changes in either kinds of analysis or results.

These facts indicate that EPA provided API with sufficient information at the time of proposal to comment on EPA's air quality analysis, and API in fact did so. *See Chemical Manufacturers Ass'n v. EPA*, 28 F. 3d 1259, 1263 (D.C. Cir. 1994) ("It is clear enough that the EPA did subject the generic air dispersion model to notice and comment rulemaking. The EPA set out the basis for the model in the [NPRM], stated its rationale for making certain assumptions, ... requested comments on the assumptions it made, ... addressed significant comments, ... and revised some modeling parameters based on the comments it received."); *Air Transport Ass'n v. FAA*, 169 F. 3d 1, 6-7 ("In the rulemaking context, an agency's notice must fairly apprise interested persons of the subjects and issues involved in the rulemaking. ... The question is typically whether the agency's final rule so departs from its proposed rule as to constitute more surprise than notice." [internal quotes and cites omitted])

EPA's updates in the air quality analysis from the proposal to the final rule in the Phase 2 rulemaking arose logically from the proposal. For ozone and fine PM, EPA used the same methodology in the final rule as it used in the proposal, with updated inventories, as noted in the proposal. The resulting air quality analysis yielded similar results to the proposed analysis regarding the issue of air quality need and did not result in any change to the underlying regulations. Courts have generally provided the Agency with considerable discretion to revise its analyses, and the proposed regulations themselves, if such revisions are logical outgrowths of the proposal. *See Natural Resources Defense Council v. Thomas*, 838 F.2d 1224,1242-43 ("*NRDC*") (Agency's decision to use a uniform NSPS presumption in the final rule, rather than the three-level approach proposed, was a logical outgrowth of the proposal).

In this context, EPA's update of the docket with supplementary information as it became available provided commenters with a reasonable opportunity to comment on the supplementary information. The facts in this case are comparable to those in *Appalachian Power*, 135 F. 3d 791. In that case, the Agency proposed a particular model to determine boiler utilization. However, in response to comments criticizing the proposed approach and noting advantages of another model, the Agency decided to use a different model in the final rule and provided notice of that fact, as well as documentation and preliminary model runs, in a related public forum. Commenters again made submissions and the Agency made adjustments based on those submissions. EPA produced a run of the new model in April, 1996 and formulated the rule based on that run. The Agency then reran the model in June of that year. EPA placed the results of the June run in the docket two-and-one-half weeks prior to the promulgation of the final rule. The Court ruled that the Agency had not committed any procedural error, that the relatively short period at the end of the rulemaking was a reasonable time for comment, where the final results were part of a series of refinements in the Agency's model, and that use of the model was a

“logical outgrowth” of the proposal. *Id.* at 814-15. “So long as the final rule promulgated by the agency is a ‘logical outgrowth’ of the proposed rule ... we will find no procedural violation.” *Id.* at 804 n. 22.

In this instance, where EPA modified its modeling approach, or where EPA updated its inventories, EPA provided such information to the docket approximately two months before the rule became final, which certainly gave commenters enough time to provide substantive comments, particularly given the information already provided to the public during the comment period. *Id.*; *Sierra Club*, 657 F. 2d 298, 398-400 (Petitioner was not denied an adequate opportunity to respond to post-comment period documents provided to EPA shortly before promulgation of the final rule). The supplementary documents that further explained the air quality analysis and that went into the docket closer to the end of the rule were provided in time for comment prior to the rule being signed. In any case, this supplementary information arose out of the information and discussion already provided. *See Community Nutrition Institute v. Block*, 749 F. 2d 50 (no procedural error where USDA relied on studies provided after the close of comment period that supported the proposed action and expanded on and confirmed information summarized in the proposal); *NRDC*, 838 F.2d. 1224, 1243 (EPA warning of change in NSPS approach, coming two weeks before final rule signed, gave industry petitioners at least a limited opportunity to focus direct attack on NSPS.). Even where information providing updates of calculations relating to the final rule is not docketed until the close of rulemaking, where the “critical elements of the proposal [do] not change, ... the final rule [is] a ‘logical outgrowth’ of the proposed rule.” *Air Transport Ass’n v. CAB*, 732 F. 2d 219, 224 (D.C. Cir 1984). *See also Solite*, 952 F. 2d 473, 484 (no violation of notice and comment provisions of APA where EPA’s methodology did not change significantly from proposal and where EPA used updated and expanded data in a new survey in response to comments criticizing the initial data).

API was provided a meaningful opportunity to comment on the air quality analysis at several points in the rulemaking. Where API did comment on the analysis EPA responded to those comments. That API may have preferred more time to evaluate post-comment period materials is not itself evidence of any procedural error. *See Sierra Club*, 657 F.2d 298, 399-400 (“The mere wishes of a participant in an informal rulemaking for more time to respond to documents in the record to which it already had opportunity to respond cannot force an agency to delay rulemaking simply because some new rebuttal evidence may be forthcoming....Were it otherwise, participants could delay promulgation indefinitely since new information continually comes to light on the subject of many proposed rules.”)

Second, API’s procedural objection is not of central relevance to the outcome of the rule because API has provided no indication that the outcome of the rule would have been different if it had a longer opportunity to object to the revised information. EPA’s final rule did not change the determination in the proposal that there were air quality concerns which required the emission reductions from the Phase 2 rule. The updated information was consistent with and quite similar to information provided in the proposal and merely supported the previous information. In addition, EPA based its proposed standards and fuel sulfur restrictions on several air quality needs, including reduction of ambient ozone and PM, specific concerns regarding the

cancer-related and noncancer-related health effects of diesel exhaust, acid deposition, and visibility. Only the first of these concerns is affected by API's objection. Moreover, even with regard to ozone and PM concentrations, the documents supporting the proposal showed that 1) current ozone and PM levels were above levels in the NAAQS and above levels considered hazardous to human health; 2) that future modeled levels of ozone and PM would also be above such levels during the period that Phase 2 rule was in place; and 3) that emissions of NO<sub>x</sub> and PM from heavy duty engines contributed to these ozone and PM levels. This documented in great detail the need for further reductions. The final air quality analysis merely provided further support, and more updated data regarding EPA's determination, with no significant changes in the resulting air quality analyses.<sup>4</sup> The final air quality analysis provided similar information as the NPRM on the need for further reductions. It also provided the specific modeled reductions in ozone in particular counties in the United States expected from the rule. This material merely confirmed what EPA had fully expected to see, based on the information provided in the proposal, that modeled reductions in NO<sub>x</sub> levels would result in modeled reductions in levels of ozone. 65 FR 35460.

Courts have made clear that updates in data from proposal to final rule are an expected outgrowth of the rulemaking process and Agencies should not be punished for improvements in data from proposal to final rule. *See Community Nutrition Inst. v. Block*, 749 F. 2d 50, 58 (court upheld USDA reliance on studies completed after comment period where studies did not provide entirely new information but supported, expanded on and confirmed information in the NPRM); *BASF Wyandotte Corp. v. Costle*, 598 F. 2d 637, 644-45 (1<sup>st</sup> Cir. 1979) (noting that it is "perfectly predictable" that an administrative agency will collect new data after the proposal "in a continuing effort to give the regulations a more accurate foundation" and stating that "[t]he agency should be encouraged to use such information in its final calculations without thereby risking the requirement of a new comment period").

Finally, API has failed to provide any substantive objections to the information that would be of central relevance to the outcome of the rule. API has failed to provide any evidence or any argument that any of the material placed in the docket by EPA after the end of the comment period was incorrect or at all problematic. API had three months to review the final rule, in addition to the time at had to review the docket materials before promulgation of the final rule, before submitting its petition for reconsideration. API failed, despite this time, to provide any substantive objections to the inventories or other materials placed into the docket after the end of the comment period.<sup>5</sup>

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<sup>4</sup> The modeling provided by EPA was only one factor used by EPA to examine future expected concentrations of ozone. EPA also reviewed data provided by states, as discussed in the proposal, that provided further information regarding future ozone concentrations. See, e.g. 66 FR 5013; RIA, at II-15 - II-27.

<sup>5</sup> Where API did object to EPA's air quality analysis during the comment period, EPA responded to those comments. It is unclear what additional material API would have provided that would be of central relevance to the outcome of the rule. The final air quality analysis

In order for a procedural objection to be of central relevance to the outcome of the rule, the petitioner must show that a procedural error occurred and that the specific objections that it would have filed would have likely led to a significant change in the outcome of the rule. Here, API provides no indication of what, if any, objections it had to the new information. Without such materials, there is no reason to reconsider the rule on this point. *See Appalachian Power*, 135 F. 3d 791, 815 (“Although EPA set out its sensitivity analysis in detail in its final Response to Comments, [citations omitted], Appalachian Power has not attempted to identify any defect in that analysis, and hence cannot establish that earlier docketing of the [later] run would have led to a significant change in the final rule.”); *Air Transport Ass’n v. CAB*, 732 F. 2d 219, 224 n. 11 (“Petitioner does not claim that the time estimates are erroneous or that the final fees are excessive. Petitioner also does not explain what it would have said had it been given earlier access to the staff studies. Under such circumstances, any error generally would be found harmless.”); *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F. 2d 506, 540-41 (D.C. Cir. 1983) (“It is also incumbent upon a petitioner objecting to the agency’s late submission of documents to indicate with ‘reasonable specificity’ what portions of the documents it objects to and how it might have responded if given the opportunity.”); *Sierra Club*, 657 F. 2d 298, 399 n.497 (noting that petitioner had eight months after the rule was signed to provide a more complete rebuttal to late-filed data).

#### B. NO<sub>x</sub> Adsorber Test Program.

API claims that EPA did not provide an adequate opportunity to comment on its NO<sub>x</sub> adsorber test program. API claims that it received nothing from EPA regarding the test program until December 12, 2000 and that the information was docketed too late to allow for meaningful comment. API claims that the grounds for this objection came after the end of the period for public comment. API also claims that the program concerns the issue of technological feasibility, which is “centrally relevant to the outcome of this rule.” API provides no substantive or technical objections to the NO<sub>x</sub> adsorber test program.

EPA does not believe that API has provided sufficient justification in support of its request for reconsideration on this claim. EPA therefore rejects the petition on this issue. For several reasons, the objections provided by API are not of central relevance to the outcome of the rule.

First, EPA rejects API’s argument that it committed procedural error regarding API’s ability to comment on the issue of technological feasibility in general and the NO<sub>x</sub> adsorber test program in particular. EPA provided considerable analysis and evidence at the time of the proposal supporting its belief that the NO<sub>x</sub> standard, and NO<sub>x</sub> adsorber technology, would be

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simply confirmed what was clear at the time of proposal, that current and future levels of ozone and PM were reasonably expected to endanger public health or welfare and that reductions in emissions from NO<sub>x</sub> and PM from heavy duty engines would help lower such levels. *See Community Nutrition Inst.*, 749 F. 2d 50, 58 (“There was no such showing [of prejudice] here, where applicants do not even suggest that the new studies were defective in any way.”)

feasible within the time frame provided. See 65 Fed. Reg 35468 - 35470; Draft RIA, at III-12 - III-19. In its NPRM, EPA noted the success already encountered with NOx adsorbers in stationary source applications. EPA noted that NOx adsorbers were already being used in gasoline-fueled motor vehicles and that manufacturers were already publishing reports showing how they would use NOx adsorbers in diesel-fueled engines. EPA noted that current NOx adsorbers had achieved over 90 percent reduction in NOx emissions over a broad temperature range. EPA discussed the particular hurdles that remained for NOx adsorber technology and how those hurdles could be overcome. EPA cited to numerous studies in the NPRM and draft Regulatory Impact Analysis supporting its analysis that NOx adsorber technology would allow the proposed NOx standards to be feasible in the leadtime provided.

API had the opportunity to comment, and did comment during the comment period on EPA's analysis. See API Comments, IV-D-343, at 31-37. Among other comments, API claimed that EPA had not provided sufficient evidence supporting the feasibility of the NOx standard using adsorbers.

EPA believes that the information provided at the time of the NPRM was sufficient to support its conclusion that the NOx standard and NOx adsorber technology would be feasible given the lead time provided. See *Natural Resources Defense Council v. EPA*, 655 F. 2d 318,328,331-332 (D.C. Cir. 1981) (“Congress intended the agency to project future advances in pollution control capability. It was ‘expected to press for the development and application of improved technology rather than be limited by that which exists today.’...We think that the EPA will have demonstrated the reasonableness of its basis for prediction if it answers any theoretical objections to the [technology], identifies the major steps necessary in refinement of the device, and offers plausible reasons for believing that each of those steps can be completed in the time available.”); *Natural Resources Defense Council v. EPA* 805 F. 2d 410 (D.C.Cir 1986) (Court rejected contention that EPA standards must be based on “adequately demonstrated technology” and held that EPA is permitted to set standards based on projections of technology that is not currently available.) However, EPA continued to review new analyses and information regarding the feasibility of the proposed standards and the technology needed to meet those standards. See *BASF Wyandotte Corp. v. Costle*, 598 F. 2d 637, 644-45 (1<sup>st</sup> Cir. 1979) (it is “perfectly predictable” that an administrative agency will collect new data after the proposal ‘in a continuing effort to give the regulations a more accurate foundation’ and “[t]he agency should be encouraged to use such information in its final calculations without thereby risking the requirement of a new comment period”). The NOx Adsorber Test Program was a significant effort to further supplement the data and analysis on which EPA was relying to show the feasibility of the standards, in part in response to objections raised by various commenters contesting its feasibility.

On October 23, 2000, EPA provided API with a Screening Summary of the ongoing test program. See A-99-06, IV-C-08; IV-G-108. The summary described the parameters of the testing and preliminary results showing NOx adsorbers were capable of reductions above 90 percent. In a letter dated December 5, 2000, API provided EPA with several questions regarding the test program. On December 12, 2000, EPA provided API with its full test report, dated

December 11, 2000, providing information on EPA's test program. It contained detailed information regarding the test program, describing the emission control system being tested, the test fuel and measurement equipment, the optimization process, and the results of the testing, which indicated that the configuration could achieve 90% NOx reductions. The report answered most of API's questions regarding the program in the December 5, 2000 letter. On December 20, 2000, API then provided further comments and questions on the test program (IV-G-160). Though these comments raised certain objections, they did not challenge the substance of program or the basic conclusions. EPA responded to API's comments in the response to comments document. See Response to Issue 3.2.1(C).

This rulemaking history shows that API had sufficient opportunity to comment on the NOx adsorber test program. EPA's proposal discussed NOx adsorber technology in detail. EPA provided API with an overview of the program in October, approximately two months prior to the promulgation of the final rule. API submitted comments to EPA on this overview on December 5 and EPA responded on December 12 with the full report on the test program. API then provided further comments on the full document that were responded to in the final rule. See *Appalachian Power*, 135 F. 2d 791, 815 (no procedural error where EPA provided early versions of emissions model for comment and produced final results two-and-a-half-weeks prior to signature); *Natural Resources Defense Counsel v. Thomas*, 838 F. 2d 1224, 1242-43 (no procedural error where Agency informed industry representatives of decision regarding final regulations two weeks prior to final rule). API notes that the overview and full report of the NOx adsorber test program were not placed into the docket until the final rule was promulgated. But API had actual knowledge of, and copies of, both of these documents and provided questions and comments on these documents prior to the promulgation of the rule. EPA responded to these comments both in the test program report and in the Response to Comments document. See *Union Oil*, 821 F. 2d 678, 682-683 (Court rejected procedural argument regarding lack of notice where "petitioners received actual notice sufficient to permit them to present their objection to the Agency."); *Sierra Club*, 657 F. 2d 298, 398 (court found no procedural error where petitioner "failed to show us any particular document ... to which it lacked an opportunity to respond...").

Further, API clearly was on notice of EPA's focus on the feasibility of NOx adsorber technology to support the emissions standards and API had a full opportunity to comment on the issue of feasibility of the NOx standards and NOx adsorber technology. This issue was raised and discussed in depth in the proposal and API commented on this issue in depth in their comments. API Comments, IV-D-343 at 31-37. The NOx adsorber test program was a logical outgrowth of the information in the original proposal. It was designed to supplement the analysis already done by EPA in the proposal. See *NRDC*, 838 F. 2d 1224, 1242 (Agency's decision to finalize uniform requirements, rather than proposed three-tier scheme, was a logical outgrowth of proposal); *Appalachian Power*, 135 F. 2d 791, 815 (use of new emissions model was a logical outgrowth of proposal); *Air Transport Ass'n v. CAB*, 732 F. 2d 219, 224 (No procedural error regarding failure to place staff studies correcting data into the docket until the final rule where studies were prompted by comments and where the types of fees and the method for calculating fees did not change in the final rule.)

The absence of procedural error is particularly clear in this instance because the final standards that are the underlying reason for API's objections, and EPA's explanation in the final rule of the feasibility of NOx adsorber technology to meet those standards, are in fact basically the same as the proposed standards and the explanation of feasibility provided in the proposal. The NOx adsorber test program supplements and is consistent with the information discussed in the proposal. *See Community Nutrition Inst.*, 749 F. 2d 50, 58 (no procedural error where USDA relied on two studies completed after the comment period which were not made public before final rule because studies "expanded on and confirmed information concerning [information] which Secretary had summarized [in the proposal]...The supplemental studies were specifically addressed to ... alleged deficiencies [that commenters raised regarding studies in the proposal] and confirmed the earlier studies' conclusion....[Responses to comments may] take the form of new scientific studies without entailing [new procedural requirements], unless prejudice is shown."); *City of Stoughton v. EPA*, 858 F.2d 747, 753 (no procedural error where "EPA set out its position early on ... [Petitioner] not only had the opportunity to comment on the [contested] issue, in fact it and other commenters specifically addressed that very issue. EPA specifically responded to the comments. Concededly, the Agency in its responses placed additional reliance on a 1984 study ... brought to [its] attention during the comment period, but EPA's conclusion [regarding the disputed issue] has never changed....The statutory requirement for notice and comment on a proposed rule does not automatically generate a new opportunity for comment every time the Agency reacts to the comments. [citation omitted]"); *International Fabricare v. EPA*, 972 F. 2d 384, 399 (Court rejected petitioners' notice-and-comment claim where EPA had proposed the use of a particular testing method, petitioners commented that test method hadn't been sufficiently tested, and EPA supplemented record with further studies confirming the reliability of the test procedure. "Because petitioners had fair notice of, and full opportunity to comment on, the issue actually decided by the EPA, we reject [petitioners'] request.")

API has also provided no indication that any information it could provide, had it had further opportunity to do so, would have been of central relevance to the outcome of the rule. The NOx adsorber test program was merely one of several test programs and studies that provided data, analysis, and further information backing up EPA's analysis. API has made no case that, even if it had provided further objections to the NOx adsorber test plan it would have undercut EPA's determination that the standards, and the NOx adsorber control technology, would have been feasible in the time provided. Indeed, EPA proposed this finding in the proposal without the use of the NOx adsorber study, and information received following the proposal merely bolstered EPA already-justified analysis that the standards were feasible. API has not shown that any objections to the study would have been reasonably likely to change the final rule. *See Union Oil*, 821 F. 2d 678, 684 (Petitioners did not show a 'substantial likelihood' that the rule would have been changed where failure to provide cost-benefit analysis did not affect the "first justification" for the contested regulation); *Cf. Community Nutrition Inst.*, 749 F. 2d 50, 58 (no showing of prejudice where new information corrected deficiency in earlier studies and "where applicants do not even suggest that the new studies were defective in any way.")

Finally, even if API believes such objections could not have been made earlier, the petitioner has failed to raise them in this proceeding. API has not provided any substantive or

technical concerns with the NO<sub>x</sub> test program beyond the concerns raised in its December 5 and December 20 letters. API has had three months to review final rule before submitting its petition in addition to time prior to end of rule, and has not provided any new objections to the substance of the material in the report. API has not shown that the objections that it would have filed would have been of central relevance to the outcome of the rule. *See Appalachian Power*, 135 F. 2d 791, 815 (Petitioner ‘has not attempted to identify any defect in [EPA’s sensitivity analysis], and hence cannot establish that earlier docketing of the [challenged document] would have led to a significant change in the final rule.’); *Air Transport Ass’n v. CAB*, 732 F.2d 219, 224 n. 11 (“Petitioner does not claim that the time estimates are erroneous or that the final fees are excessive. Petitioner also does not explain what it would have said had it been given earlier access to the staff studies. Under such circumstances, any error generally would be found harmless.); *Sierra Club*, 657 F. 2d 298, 399 n. 497 (noting that petitioner had not provided additional rebuttal material during pendency of petition for reconsideration); *Community Nutrition Inst.*, 749 F. 2d 50, 58 (There was no ... showing [of prejudice] ... where appellants do not even suggest that the new studies were defective in any way.”). Here, API has provided no substantive objections to the material docketed after the end of the comment period; nor any indication that what API would have filed would have caused any change to the outcome of the rule.

### C. Benefit-Cost Analysis.

API claims that EPA did not include a benefit-cost analysis in the proposal and did not provide such a document until the final rule. API states that it had asked in its comments when benefit-cost analysis would be made available. API claims now that it couldn’t comment on benefit-costs analysis until end of final rule. API claims benefit-cost analysis is “of central relevance” to the rule. API notes that the analysis is required under E.O. 12866. API provides no substantive or technical objections to the benefit-cost analysis, nor does it demonstrate that any substantive or technical objections to the benefit-cost analysis would have led to an expected change in the rule.

EPA does not believe that API has provided sufficient justification in support of its request for reconsideration on this claim. EPA therefore rejects the petition on this issue.

API has provided no objection that could not have been raised during the comment period. API’s comments allege that EPA committed a procedural error because it did not provide an opportunity for comment on the benefit-cost analysis. API does not comment on the actual analysis that was provided in the final rule, nor does API comment on any other issue that could not have been raised during the comment period. API’s procedural objection could have been raised, and in fact was raised, by API during the rulemaking. As API raises no new issues in this request, there is no need to reconsider the rule based on this issue.

In the NPRM, EPA provided a detailed description of the procedures and methods it would use to produce the benefit-cost analysis. 65 FR 35499-35504. EPA also cited to the benefit-cost analysis provided in the recently-completed Tier 2 rule and stated that based on the

similarity of the proposal with the Tier 2 rule in terms of cost per ton of emissions reduced and the type of health and welfare benefits expected, the benefits would be expected to substantially outweigh the costs.

API's comments raised its procedural objection (IV-D-343 at 81) stating that API is surprised EPA would write multiple pages on the benefit-cost analysis process but not issue the benefit-cost analysis as part of the proposed rule. API claimed that EPA's failure to complete a benefit-cost analysis until the final rule is an abrogation of the rulemaking process because it withholds essential justification documents. API requested that EPA issue the benefit-cost analysis as soon as possible and extend the comment period accordingly. EPA responded to these comments in Issue 5.10(E) of its Response to Comment document. The comments API provides in this request for reconsideration have therefore been generally raised and responded to in the rulemaking, and EPA need not respond again here.

Furthermore, API's procedural objection is not of central relevance to the outcome of the rule. First, EPA did not commit procedural error. During the NPRM, EPA provide a detailed discussion of the methodology it would use for the benefit-cost analysis. API had a full opportunity to comment on this methodology. EPA also provided its prediction that based on previous results using that methodology, the results of the benefit-cost analysis would likely show that benefits outweighed costs. In its comments on the proposed rule, API provided no detailed comments on the methodology EPA would use for the benefit-cost analysis, saying only that the benefit-cost analysis was a waste of money. Nor did API raise any question regarding EPA's assertion that benefits would likely outweigh costs in the final benefit-cost analysis.

During the period between the proposal and the final rule, EPA periodically supplemented the docket with materials that it would use to prepare its benefit-cost analysis. This included detailed descriptions of the emissions inventory methodologies and summaries of the projections in October 2000, and several memoranda summarizing various aspects of the air quality modeling supporting both the benefit-cost analysis and other aspects of the rule that were placed in the docket in October, November, and December, 2000. Though API was aware of such materials, API did not provide comments regarding the materials, except to ask for a reopening of the comment period to respond to the materials.

For the final rule, EPA presented its benefit-cost analysis, using the same methodology it discussed in detail in the proposal. The benefit-cost analysis, as expected, showed substantial benefits resulting from the rule, significantly exceeding the costs. These are similar and consistent with the benefits and costs associated with the previously finalized Tier 2 rule, as discussed in the proposal.

The final benefit-cost analysis was therefore a logical outgrowth of the information provided in the proposal. *See Chemical Manufacturers Ass'n v. EPA*, 28 F. 3d 1259, 1263 (D.C. Cir. 1994) ("It is clear enough that the EPA did subject the generic air dispersion model to notice and comment rulemaking. The EPA set out the basis for the model in the [NPRM], stated its rationale for making certain assumptions, ... requested comments on the assumptions it made, ...

addressed significant comments, ... and revised some modeling parameters based on the comments it received.”); *Engine Manufacturers Ass’n v. EPA*, 88 F.3d 1075, 1083 (D.C. Cir. 1996) (EPA decision regarding scope of preemption was a logical outgrowth of proposal where NPRM announced that preemption was at issue and announced that it would construe preemption similarly to a previous related interpretation); *Air Transport Ass’n v. CAB*, 732 F.2d 219, 224 (CAB gave sufficient notice of final fees where “the Board both outlined the method by which it proposed to calculate the fees and listed the type of fees it proposed to charge. The critical elements of the proposal did not change, and the final rule was a ‘logical outgrowth’ of the proposed rule.”); *Solite Corp. v. EPA*, 952 F.2d 473, 484-85 (agency may use supplementary data, unavailable during the notice and comment period, that expands on and confirms information contained in the proposed rulemaking).

Moreover, API has not shown that had the benefit-cost analysis been available prior to the end of the comment period, it “would have led to a significant change in the final rule.” *Appalachian Power*, 135 F. 3d 791, 815. API’s petition for reconsideration contains no substantial or technical concerns with the benefit-cost analysis. In particular, API provides no information regarding any objection it has to any information placed in the docket following the comment period. As discussed above, “petitioners objecting to the agency’s late submission of documents [must] indicate with ‘reasonable specificity’ what portions of the documents it objects to and how it might have responded if given the opportunity.” *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F. 2d 540-41 (D.C. Cir. 1983). *See also Appalachian Power*, 135 F. 3d 791, 815; *Air Transport Ass’n v. CAB*, 732 F. 2d 219, 224 n. 11; *Sierra Club*, 657 F. 2d 298, 399 n.497. In fact, API did not provide any such specific comments during the comment period on the portions of the benefit-cost analysis that were available at that time.

As noted above, the benefit-cost analysis was a supplementary analysis that EPA performed to provide further insight regarding the rule. EPA made clear throughout this rulemaking that cost-effectiveness analysis and not the benefit cost analysis would be the primary criterion used for evaluating the overall economic consequences of the rule. Given the concerns EPA had regarding benefit-cost analysis, EPA did not depend on the benefit-cost analysis either at the time of proposal or at the time of the final rule as a primary economic indicator for the rule. In fact, API itself indicated that EPA should not rely on benefit-cost analysis. Therefore, even if API had provided comments regarding the substance of EPA’s benefit-cost analysis there is no indication that EPA’s decisions on the substance of final rule would have changed. Thus, API’s objection is not of central relevance to the outcome of the rule. *See Union Oil*, 821 F. 2d 678, 684 (Petitioners did not show a ‘substantial likelihood’ that the rule would have been changed where failure to provide cost-benefit analysis did not affect the “first justification” for the contested regulation).<sup>6</sup>

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<sup>6</sup> API references Executive Order 12,866 in its petition. Both the proposal and final rule went through inter-agency review in compliance with this Executive Order. *See* 65 FR 35430, 35540 (June 2, 2000), 66 FR 5002, 5129 (January 18, 2001). The Executive Order by its terms creates no rights or benefits for any party against EPA.

#### D. Issues and Information Related to the Supply of Highway Diesel Fuel

In its petition for reconsideration, API requests an opportunity for public comment on the data that has been submitted regarding the potential implications of the final rule on the supply of diesel fuel, claiming that EPA did not provide an opportunity to comment on the information developed in response to API's supply study. API claims that it was impractical to comment on EPA's use of the Muse, Stancil and Co. report, and that even if it were practicable, the Muse, Stancil and Co. report was not in the administrative record early enough for review. Petition at 9-10. API also requests that EPA provide an opportunity for public comment on the role of off-highway diesel in supply, cost, and compliance with the final highway diesel fuel program. Petition at 11. API claims that the issue of the supply of diesel fuel is "of central relevance" to the outcome of this rule. Petition at 10.

API has failed to support that this issue is of central relevance to the outcome of the rule. First, an objection based on procedural grounds would not be of central relevance to the outcome of the rule, and hence would not require reconsideration, if in fact the Agency has not committed any procedural error. The Agency has not committed any procedural error.

The NPRM discussed supply and shortfall issues comprehensively. All aspects of the supply issue were raised for comment, including issues such as the impacts of a cap versus an average sulfur standard; the role of nonroad fuel; an averaging, banking and trading program; technological feasibility of meeting a 15 ppm standard; the start date for application of the standard; refiner feasibility regarding capital expenditures; phase-in options; and the role of nonroad diesel downgrading. EPA's proposal noted that, after consideration of all of the relevant factors, the proposal would not create supply shortfalls.

API submitted the CRA study, other comments and follow-up comments and analyses in response to the NPRM and submissions by other parties. Various additional parties also submitted comments and additional analyses on this issue.

In response to API's contention that refiners would reduce their highway diesel fuel production by 12 percent, as detailed in the CRA study, EPA met with and discussed the CRA study with API and its contractor, and commissioned its own study. That study (Muse, Stancil) was docketed December 21, 2000. The NERA critique of the CRA study separately raised many of the same issues as the Muse, Stancil study and API had an opportunity to and responded to the NERA study. API and other members of the public had fair and comprehensive notice and did comment broadly on the issue of supply. The Muse, Stancil study was a part of this notice and comment process and was consistent with EPA's proposal and other comments received.

EPA's determinations in the final rule on the issues involving supply of highway diesel fuel were consistent with its earlier conclusions that the rule would not cause supply shortages. In response to public concern regarding supply, EPA's final rule also included a phase-in option as a temporary safety measure to avoid any potential supply disruptions. EPA's position

remained consistent throughout the rulemaking process. API simply disagreed with EPA's position regarding the risk to the supply of highway diesel fuel.

In the NPRM, EPA discussed supply issues, specifically the role of nonroad diesel fuel. EPA asked for comment on the possibility of reduced highway fuel due to refiners abandoning the market. EPA acknowledged the possibility of downgraded products being shifted to other markets (nonroad fuel). API was provided more than adequate opportunity for comment and did, for example by submitting its analysis assessing the feasibility of redirecting nonroad fuel to on-highway use. EPA provided a full opportunity to comment on the role of off-highway diesel fuel in the supply, cost, and compliance with the on-highway diesel fuel requirements.

EPA's additional analysis on the supply issue, its response to comments, and its final views on this issue, all arose from the proposal and the final rule is a logical outgrowth of the proposal. *See Community Nutrition Inst.*, 749 F. 2d 50, 58 (no procedural error where USDA relied on two studies completed after the comment period which were not made public before final rule because studies "expanded on and confirmed information concerning [information] which Secretary had summarized [in the proposal]...The supplemental studies were specifically addressed to ... alleged deficiencies [that commenters raised regarding studies in the proposal] and confirmed the earlier studies' conclusion....[Responses to comments may] take the form of new scientific studies without entailing [new procedural requirements], unless prejudice is shown."); *City of Stoughton v. EPA*, 858 F.2d 747, 753 (no procedural error where "EPA set out its position early on ... [Petitioner] not only had the opportunity to comment on the [contested] issue, in fact it and other commenters specifically addressed that very issue. EPA specifically responded to the comments. Concededly, the Agency in its responses placed additional reliance on a 1984 study ... brought to [its] attention during the comment period, but EPA's conclusion [regarding the disputed issue] has never changed....The statutory requirement for notice and comment on a proposed rule does not automatically generate a new opportunity for comment every time the Agency reacts to the comments. [citation omitted]"). *See BASF Wyandotte Corp. v. Costle*, 598 F. 2d 637, 644-45 (1<sup>st</sup> Cir. 1979) (noting that it is "perfectly predictable" that an administrative agency will collect new data after the proposal 'in a continuing effort to give the regulations a more accurate foundation" and stating that "[t]he agency should be encouraged to use such information in its final calculations without thereby risking the requirement of a new comment period"). Based on the above, EPA committed no procedural error.

Second, API's procedural objection is not of central relevance to the outcome of the rule because API has provided no indication that the outcome of the rule would have been different if the Muse, Stancil and Co. report been placed in the administrative record earlier, or if another opportunity to comment on the role of off-highway diesel fuel was provided. It is not enough for API to claim that it did not have sufficient time to comment during the rulemaking; it must show what objections it would have filed and that they would have been of central relevance to the outcome of the rule. *See Appalachian Power*, 135 F. 2d 791, 815 (Petitioner 'has not attempted to identify any defect in [EPA's analysis], and hence cannot establish that earlier docketing of the

[challenged document] would have led to a significant change in the final rule.”); *Air Transport Ass’n v. CAB*, 732 F.2d 219, 224 n. 11 (“Petitioner does not claim that the time estimates are erroneous or that the final fees are excessive. Petitioner also does not explain what it would have said had it been given earlier access to the staff studies. Under such circumstances, any error generally would be found harmless.”); *Sierra Club*, 657 F. 2d 298, 399 n. 497 (noting that petitioner had not provided additional rebuttal material during pendency of petition for reconsideration); *Community Nutrition Inst.*, 749 F. 2d 50, 58 (There was no ... showing [of prejudice] ... where appellants do not even suggest that the new studies were defective in any way.”)

In its Petition for Reconsideration, API has not presented any new information on the supply issue that would warrant reconsideration of EPA’s position. EPA therefore is not granting the petition for reconsideration on this point.

#### E. The Designated Test Method for Diesel Sulfur and Statements Regarding ASTM D 5453-00 in the Final Rule

API claims that EPA did not provide an opportunity for public comment on the designated test method for diesel sulfur. Because EPA did not propose the designated test method adopted in the final rule, D 6428-99, API claims that the grounds for this objection arose after the period for public comment. API also claims that the test method is “of central relevance to the outcome of the rule.” API also requests that EPA provide a more complete rationale for selecting D 6428-99.

API has failed to provide any evidence or other indication of how its procedural objection is of central relevance to the outcome of the rule. First, an objection based on procedural grounds would not be of central relevance to the outcome of the rule, and hence would not require reconsideration, if in fact the Agency has not committed any procedural error. The Agency has not committed any procedural error here.

EPA’s notice of proposed rulemaking stated that alternative test methods to the proposed designated test method, D 2622-98 with modifications, could be used. 65 FR at 35531. The proposal stated that alternative test methods would be allowed for purposes of quality assurance testing, provided that proper correlation is established with the benchmark. 65 FR at 35531. The public was on notice that testing methods, even those not mentioned in the proposal, would be considered.

EPA originally proposed a modified form of ASTM D 2622-98 for low sulfur diesel fuel. D 2622-98 measures sulfur in its elemental form, rather than sulfur associated with other elements and therefore, at very low levels, we believed it to be the better method. It was also a method that industry was familiar with and that was in widespread use for determining compliance under the RFG and anti-dumping regulations and the existing 500 ppm sulfur regulations.

We received many comments on the modified version of D 2622-98 we proposed as the test method. In general, comments from industry favored D 5453-00 as the designated test method. EPA discussed our concerns regarding the appropriate test procedure, including concerns regarding sulfonates, with representatives from the refining and related industries, including petitioner. This included discussing the possibility of choosing D 6428-99 as the designated test method at a meeting with industry representatives from API's Test Methodologies Work Group on November 15, 2000. The correspondence that we received from API on this and other test method related issues, and all comments received on test methods, are part of the public docket. In its December 1, 2000 correspondence with the Agency, API recognized that D 6428-99 and D 3120-96 were "candidate test methods," and submitted comments on those test methods. See API letter, question 3. API opposed the use of either D 6428-99 or D 3120-96. See API letter, question 3.

In the final rule, EPA decided, based on all comments and EPA testing, that D 2622-98 (as described in the NPRM) was not the best method. EPA selected D ASTM 6428 as the designated test method, and allowed various test methods including D 5453-00 as an alternative to the designated test method.

In the Petition for Reconsideration, API is restating its prior objections to the designated test method and alternatives. API has not provided the Agency with any information not provided during the comment period.

EPA's revisions in the test method from the proposal to the final rule arose logically from the proposal. EPA may promulgate a final rule that differs from its proposal without allowing further comment if the relevant changes are a logical outgrowth of the proposed rule. *NRDC v. Thomas*, 838 F.2d 1244, 1242 (D.C. Cir. 1988). "In the rulemaking context, an agency's notice must fairly apprise interested persons of the subjects and issues involved in the rulemaking. ... The question is typically whether the agency's final rule so departs from its proposed rule as to constitute more surprise than notice." *Air Transport Ass'n v. FAA*, 169 F. 3d 1, 6-7 [internal quotes and cites omitted]. D 6428-99 and the alternate methods, D 3120-96, D 5453-00 and D 2622-99 were discussed and analyzed during the rulemaking. API and other members of the public were aware that EPA was considering each of these test methods, as well as others, for the final rule. API had an opportunity to and did comment on whether EPA should adopt D 6428-99 as the designated method. Therefore, EPA did not commit a procedural error.

Second, API's procedural objection is not of central relevance to the outcome of the rule because API has provided no indication that the outcome of the rule would have been different if EPA had proposed D 6428-99 in the proposal. API raised its objections to D 6428-99 during the rulemaking and EPA responded to them. See Response to Comments 8.2(D), (E), (F), (G), (H), and (I). API has raised no new objections or additional information that would warrant reconsideration of this issue. *Sierra Club*, 657 F. 2d 298, 399 n. 497 (noting that petitioner had not provided additional rebuttal material during pendency of petition for reconsideration). *Union Oil*, 821 F.2d 678, 682-683 (Court rejected procedural argument regarding lack of notice where

“petitioners received actual notice sufficient to permit them to present their objection to the Agency.”)

EPA continues to believe that the decisions made in the final rule regarding test procedures for low sulfur diesel fuel were appropriate, and API has not presented good reasons to change these decisions.

The sulfur standard for motor vehicle diesel fuel and diesel fuel additives rule is generally 15 ppm 40 CFR 80.520, 80.521. Sulfur content, for purposes of those sections, is to be determined using the test methods specified in 40 CFR 80.580. ASTM D 6428-99 is the method specified under 80.580(a)(2)(i) for determining the sulfur content of diesel fuel subject to the 15 ppm standard. No restrictions are placed on its use. EPA also specified several alternative test procedures that may be used, including ASTM D 5453-00, subject to a restriction based on correlation with test results obtained under D 6428-99. 40 CFR 80.580(a)(3)(i). In practice, “correlation” means that a laboratory would develop a set of correlation equations and update them as appropriate. The correlation equations are applied to results obtained via an alternative test method, i.e. to “correlate” those results to the designated test method.

In this rule, EPA typically refers to D 6428-99 as “the designated method,” and the other methods as “alternative methods.” Under the regulations, compliance with the applicable sulfur standard is to be determined using the designated test method or one of the alternative test methods, including any restrictions on the use of an alternative test methodology. 40 CFR 80.611(a). Finally, EPA provides that any evidence or information can be used to establish the level of sulfur in diesel sulfur for purposes of demonstrating compliance or non-compliance, if it is relevant to demonstrating whether the sulfur level would have been in compliance if the appropriate test methodology had been used. This evidence can include use of test procedures other than those specified in 80.580. As a result, while EPA has specified one test procedure, D 6428-99, as the designated test procedure, the industry has significant flexibility to use other test procedures under reasonable circumstances, including D 5453-00. EPA expects that this will in fact occur, and nothing in the regulations prohibits this.<sup>7</sup>

EPA selected D 6428-99 in the final rule because it had the most applicable range for sulfur content in diesel fuel anticipated under the 15 ppm program. The scope of the D 6428 test method is for samples containing sulfur from 0.05 to 100 mg/kg compared to 1.0 to 8000 mg/kg for D 5453 and 3.0 to 100 ppm for D 3120. Since refiners are reasonably expected to produce diesel fuel on average at 7 ppm in order to meet a 15 ppm per gallon standard, we expect to see many samples in the 2-5 ppm sulfur range under this program. We would also expect to see some samples below 1 ppm sulfur. We would expect to see virtually all samples fall between ½ ppm and 20 ppm. Considering the applicable ranges of the test methods in light of the expected

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<sup>7</sup> Under the final rule, regulated parties are not required to conduct refinery gate or quality assurance testing. Sampling and testing is voluntary, but we reasonably expect that regulated parties, including refiners and importers, will universally engage in such activities.

product, D 6428 has the best range. For D 6428, the expected range of in-use sulfur in diesel fuel is closer to the middle of the test procedure range, and farther from the end points of the range, which would tend to make D 6428 more accurate in this expected range of in-use sulfur compared to the other test procedures. This avoids choosing a method that must be used at either extreme end of its stated range. In the case of D 5453, samples would be expected to fall at the low end of the range, where there would be more statistical variability. In addition, since we can reasonably expect some samples to fall below 1 ppm sulfur, such samples would fall outside the stated low end range (i.e. as stated in the scope of the method itself) for D 5453.

The stated range is included in the scope of each ASTM test method and describes, among other things, the type of product and characteristics that the method is appropriately applied to determine. We understand that API objects to D 6428 in part because it was not developed under ASTM's Committee D.02 for Petroleum Products and Lubricants and was, instead, developed under ASTM's Committee D.16 for Aromatic Hydrocarbons and Related Chemicals. Although D 6428-99 is designed to measure sulfur contamination in aromatic hydrocarbons and was not developed under ASTM's Committee D.02 for Petroleum Products and Lubricants, the scope and stated range is certainly appropriate for diesel fuel, which for this purpose can be viewed as a liquid solution of hydrocarbons containing aromatics, olefins, and paraffins. Of these three, aromatic hydrocarbons are the most difficult to ignite by compression (or autoignition). Since D 6428 is designed to pyrolyze aromatic hydrocarbons, it follows that it would also pyrolyze olefins and paraffins. The combustion products are CO<sub>2</sub> and SO<sub>2</sub> and the method measures the sulfur in SO<sub>2</sub>. (ASTM D 5453 works similarly in this regard.) We do not view the identity of an ASTM committee as sufficient reason to reject D 6428-99 as the designated test method, since on a technical basis, we believe the method is entirely appropriate for measuring the sulfur content of motor vehicle diesel fuel.

API has raised concern about the cost of methods. As of the time the final rule was developed, we found that the D 6428 instrument typically sold for slightly less than D 5453. However, as API points out, many refiners would not own the designated test method instrument for purposes of compliance with diesel sulfur requirements. Part of our reasoning for allowing a range of alternative test methods was to give refiners a choice whether or not to purchase the designated test method. As discussed above, other than a requirement to correlate test results to the designated test method, there is no restriction on the use of alternative test methods under this rule. Refiners would not have to purchase the D 6428 instrument for purposes of correlation. Consistent with statements made in "Volatility Regulations for Gasoline and Alcohol Blends; Final Rule," 58 FR 14476 (March 17, 1993), EPA is willing to assist with a correlation program with anyone interested.

API has raised concern that no round robin testing has yet been done with ASTM D 6428-99 (or with the proposed, modified version of ASTM D 2622-98) to establish the reproducibility of the method from laboratory to laboratory. The December 1, 2000 letter we received from API specifically raised this issue with respect to D 6428. While no round robin testing had been done, this does not raise a significant concern with regard to our selection of D 6428-99 as the

designated test method. Both methods, D 6428-99 and D 5453-00, pyrolyze compounds in a similar fashion to form the combustion products of CO<sub>2</sub> and SO<sub>2</sub> and both methods detect the sulfur in SO<sub>2</sub>. One main difference between the methods is that D 5453-00 uses a ultra-violet fluorescent detector and D 6428-99 uses a electrochemical detector to measure SO<sub>2</sub>. Based upon basic knowledge of how the instrument works, there is not any reasonable cause to expect poorer reproducibility from D 6428-99 than from D 5453-00. Unless there is some reason to expect reproducibility to be a problem or actual data to show that it is a problem, the lack of an official round robin test program to date is not adequate reason to reject the use of D 6428-99 as the designated test method. API has raised concern that round robin testing is necessary to establish precision of the instrument. Although it is true that reproducibility may be used to come up with internal industry controls, such as pipeline specifications, there is no reason to suspect that D 6428 has worse reproducibility than D 5453. Conducting a round robin is not a significantly expensive process and most of the expense is associated with sample acquisition. EPA would be willing to participate in a round robin with industry.

During the early part of the year, the fuels lab of the NVFEL ran a brief comparison program designed to determine if any of the proposed methods has significant quality weaknesses. For this effort, the lab ran 216 test on 58 samples, most of which were taken from enforcement or oversight samples selected at random from various locations across the country. Five of the lowest sulfur concentration samples were used to directly compare D 5453 to D 6428. For this direct comparison, 40 tests were run with a D 5453 instrument, and 30 tests on the same samples were run on a D 6428 instrument. Samples were generally run in quadruplicate on the D 5453 instrument, and in triplicate on the D 6428 instrument. The standard deviations (SD) of the replicate groups were calculated. The conclusion drawn was that, although the D 6428 instrument had slightly better precision, there was no significant precision advantage to either method. As a result, it was determined that method precision was not a factor in choosing between D 6428 and D 5453.

As part of the final rulemaking, EPA recognized that many in industry might have purchased or planned to purchase D 5453-00 equipment. Although we did not specify D 5453-00 as the designated test method, for the reasons discussed above, we believe that D 5453-00 is an appropriate method for measuring the sulfur content of 15 ppm diesel fuel under this regulation, and so we included it as an alternative test method under §80.580(a)(3)(i). The other alternative test method permitted is D 3120-96. By permitting D 5453-00 and D 3120-96 as alternative test methods, regulated parties are given significant flexibility with regard to their testing equipment purchase choice.

EPA has permitted the use of alternative test methods in the past, when regulated parties have indicated some cost benefit or other reason to do so. For example, we permit the use of alternative test methods for oxygen and aromatics under the reformulated gasoline (RFG) and anti-dumping rules at § 80.46(f)(3) and (g)(9)(i). Under this diesel sulfur rule and other fuels rules, test results derived from the use of an alternative test method must be correlated to the designated method. In practice, this involved an initial effort to develop a correlation equation for the two test procedures involved, followed by periodic verification of the correlation equation

(typically through side by side analysis with the designated method). The correlation equation must be applied to every result that is reported. The appropriate frequency with which a party would have to develop or adjust correlation equations may vary, depending on seasonal effects and other factors that may influence the broader characteristics of its fuel. It is unnecessary for a party to purchase the designated test method in addition to the alternative test method, since the designated method portion of this required correlation testing may be performed by an outside entity and the development of correlation equations may reasonably be accomplished with advice from the manufacturer of the test method. Furthermore, EPA will work with industry to facilitate the use of alternative test methods such as D 5453-00 and will be available to perform some correlation if parties require it. EPA will also participate in exchange programs as they are developed in the future for the measurement of low sulfur in diesel.

Many parties argued that D 5453-00 is a lower cost alternative to other methods. We believe that D 6428-99 is comparably priced based upon our own internal review of methods. At the time we conducted our review, we found 6428 to be priced slightly lower. Several parties stated that D 2622-98 is a more expensive method. We believe that this is true. But although we did specify D 2622-98 as the designated test method for diesel fuel that is subject to the 500 ppm standard under §80.580(2)(ii), both D 5453-00 and D 6428-99 are allowable alternative methods for 500 ppm sulfur as well. Furthermore, D 2622-98 was already the designated test method for measurement of sulfur under the RFG and anti-dumping regulations, and under the gasoline sulfur regulations, at § 80.46(a). Since many refiner, importers, and laboratories would already have this method available, we do not believe specifying D 2622-98 as the designated test method for fuel subject to the 500 ppm standard represents a significant added burden. Nevertheless, the existence of alternative analytical test methods certainly adds significant flexibility to the regulated party with regard to its equipment purchases. Regulated parties are free to choose the appropriate test method that best suits their analysis needs and budget.

The preamble to the final diesel rule and the regulatory language at § 80.580 did contain certain errors that require correction. First, in the preamble, we cited sulfonate measurement issues as one reason for choosing D 6428-99 over D 5453-00. This was an inadvertent error. Although we did have concerns about sulfonates at the proposal stage, we considered the comments and information we received from industry (including the information submitted to us by petitioner during the rulemaking) and believed then and now that this issue is not significant for purposes of specifying the designated or alternative test methods. Second, the list of designated and alternative test methods in the regulations contains an error, and should instead be as follows:

For diesel fuel subject to the 15 ppm standard:

- Designated test method - ASTM D 6428-99.
- Alternative test methods - ASTM D 5453-00, ASTM D 3120-96, and ASTM D 2622-98 as modified.

For diesel fuel subject to the 500 ppm standard:

- Designated test method - ASTM D 2622-98.
- Alternative test methods - ASTM D 5453-00, ASTM D 6428-99, and ASTM D 4294-83 (updated to the current version). ASTM D 4294 was already included as a test method under § 80.30(g)(2)(ii) and was accidentally deleted.

EPA intends to issue a technical correction to address these errors in the regulations.

#### V. Conclusion.

For the reasons discussed above, EPA is denying API's Petition for Reconsideration. The grounds for mandatory reconsideration under section 307(d) have not been met, and no good grounds have been shown that would otherwise warrant granting of this petition.